

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1 (Currently amended). A method for generating O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes, suitable for repairing damage caused by demyelinating diseases, comprising growing embryonic stem (ES), embryoid bodies (EB) derived from ES cells and/or neurosphere (NS) cells derived from ES or EB cells in the presence in a culture medium that promotes differentiation of NS cells into O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes, said culture medium comprising ~~of~~ one or more gp130 activators selected from the group consisting of CNTF, oncostatin-M (OSM)~~OSM~~, IL-6, IL6R/IL6 chimera and IL-11, thereby causing the NS cells to differentiate into O1<sup>+</sup> and/or O4<sup>+</sup> oligodendrocytes.

2 (Cancelled).

3 (Currently Amended). The method according to claim 2, wherein the ~~gp-130~~gp130 activator is IL-6.

4 (Cancelled).

5 (Currently Amended). The method according to claim ~~4~~1, wherein the cells are dissociated NS cells.

6 (Cancelled).

7 (Currently Amended). The method according to claim 1, wherein ~~the oligodendrocyte~~ oligodendrocytes ~~is~~ of ~~01+01<sup>+</sup>~~ lineage are generated.

8 (Currently Amended). The method according to claim 1, wherein ~~the oligodendrocyte~~ oligodendrocytes ~~is~~ of ~~04+04<sup>+</sup>~~ lineage are generated.

9-53 (Cancelled).

54 (New). A method in accordance with claim 1, wherein said one or more gp130 activators is the only growth or differentiation agent present in the culture medium.

55(New). A method in accordance with claim 1, wherein said NS cells are human NS cells